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Aspirin and Diabetic Retinopathy: the Singapore Epidemiology of Eye Disease (SEED) study

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Abstract

Purpose : To determine the cross-sectional association between aspirin use and DR among persons with diabetes in a population-based study.

Methods : Participants aged >40 years were recruited from the Singapore Epidemiology of Eye Diseases (SEED) Study. Diabetes was defined based on random glucose ≥ 11.1 mmol/L, use of diabetic medication, or a previous physician diagnosis. Retinal photographs were graded for DR according to the modified Airlie House classification. Vision threatening diabetic retinopathy (VTDR) was further defined as the presence of severe non-proliferative DR, proliferative DR, or clinically significant macular oedema. The association between aspirin use and the presence of any DR or VTDR was determined using multivariable logistic regressions, adjusted for age, gender, ethnicity, history of cardiovascular disease and other potential confounders.

Results : We included 2,075 participants with diabetes who had complete data about systemic conditions and DR. Of these, 400(19.3%) had history of cardiovascular diseases, 716 (34.5%) had any DR and 178 (8.6%) had VTDR. After adjusting for age, gender, ethnicity, socio-economic status, body mass index, HbA1c, hypertension, cholesterol levels, aspirin use was significantly associated with the likelihood of having any DR (OR = 1.41, 95% CI: 1.09 to 1.81, $P = 0.008$) and VTDR (odds ratio [OR] =1.90, 95% confidence interval [CI]: 1.29 to 2.82, $P = 0.001$). After further adjustment for the presence of cardio-vascular diseases, the associations between aspirin and VTDR (OR = 1.66, 95% CI: 1.07 to 2.54, $P = 0.021$) remained significant. In analyses stratified by cardiovascular disease, the relationship between aspirin and VTDR was similar among persons with (OR 1.67, 95% CI: 0.85 to 3.35, $P = 0.139$) and without (OR 1.48, 95% CI: 0.8 to 2.57, $P = 0.187$) cardiovascular disease.

Conclusions : Persons with diabetes who were on aspirin were more likely to have DR, particularly VTDR. Whether these findings suggested a possible complication of taking aspirin or whether it reflects increased severity of diabetes among patients on aspirin requires further clinical studies.

This is an abstract that was submitted for the 2016 ARVO Annual Meeting, held in Seattle, Wash., May 1-5, 2016.

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